

Serial No.: 09/833,119
Examiner: Fred O Ferris, III

Listing of the Claims

1 -17 (Canceled).

18 (Previously Amended). A method for analyzing the performance of a design of an optical span, said method comprising the steps of:

selecting components that make-up the optical span;

optimizing the optical span to make an operable optical span;

performing a margin analysis on said operable optical span to determine how much change said operable optical span can tolerate in a plurality of case types before said operable optical span becomes an inoperable optical span, wherein said step of performing a margin analysis on said operable optical span further includes the steps of:

receiving at least one parameter identifying incremental changes that are to be made to said operable optical span;

incorporating an incremental change into at least one component of said operable optical span in accordance with a case type;

analyzing the changed optical span;

determining whether the changed optical span is an operable optical span;

determining whether all of the components of the optical span and all of the case types have been analyzed; and

presenting the results of the margin analysis to a user.

19 (Original). The method of Claim 18, wherein said step of optimizing the optical span to make an operable optical span further includes the steps of:

analyzing the design of the optical span;

determining whether the design of the optical span is an operable optical span; and

if not, analyzing a received signal spectrum and adjusting a transmitted signal spectrum to improve the characteristics of the received signal spectrum, wherein the received signal

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spectrum is continually analyzed and the transmitted signal spectrum is continually adjusted until there is an operable optical span.

20 (Previously Amended). The method of Claim 18, wherein said step of determining whether the changed optical span is an operable optical span further includes the steps of:

if yes, incorporating the next incremental change into the at least one component of said optical span in accordance with the case type and repeating the analyzing step and the determining step until the changed optical span is no longer an operable optical span;

if not, identifying the previous incremental change as a margin limit for the at least one component in accordance with the case type; and

wherein said step of determining whether all of the components of the optical span and all of the case types have been analyzed further includes the steps of:

if not, incorporating an incremental change into the next at least one component of said operable optical span in accordance with the case type and repeating the analyzing step and the two determining steps until all of the components of the optical span and all of the case types have been analyzed;

if yes, organizing the results of the margin limits.

21 (Original). The method of Claim 20, wherein the case type is a sensitivity case during which there is determined an allowable amount of change in a position of an in-line amplifier relative to adjacent in-line amplifiers.

22 (Original). The method of Claim 20, wherein the case type is a simultaneous case during which there is determined an allowable amount of change that can be made to the lengths of all segments of fiber optic cables.

23 (Original). The method of Claim 20, wherein the case type is an independent case during which there is determined an allowable amount of change that can be made in one

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segment of fiber optic cable when there are no changes made to the remaining segments of fiber optic cables.

24 (Original). The method of Claim 20, wherein the case type is a channel case during which there is determined how many channels can be tolerated by the design of the optical span.